

**ABSTRACT**

The present invention relates to a filter (45) for filtering signals in a telecommunications system, a method of designing said filter, and a corresponding splitter filter. The inventive filter (45) is characterised in that it is passive and has a complex impedance which gives good impedance matching to the complex impedance of a transmission line. Because the filter is passive, it does not need to be powered and can thus be placed in locations that lack a power supply. The filter will also function in the event of a power failure. Because the filter has an impedance which can be well matched to the complex impedance of a transmission line, problems relating to echo and side tones can be minimised.

The design of the inventive filter has been made possible by utilising that a certain determined level of losses can often be accepted in respect of the filter. The impedance of the filter can be made similar to the impedance of a transmission line, by intentionally introducing into the filter losses (15, 17) which assist in making the impedance of the filter more complex. This can be achieved without the use of active elements.

Publication Figure: Figure 9